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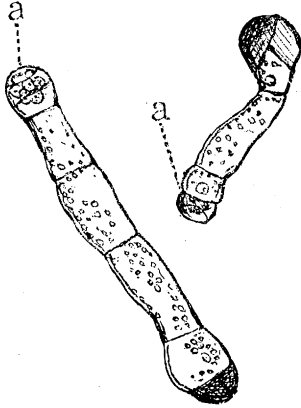
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prothallia bearing the archegonia were like those in most ferns, and had the heart shape characteristic of the fern-prothallium. In no cases were perfect antheridia found upon these, while, on the other hand, none of the male prothallia was found to subsequently develop archegonia, although carefully watched.

The male prothallia were much smaller, and, though sometimes heart-shaped, were generally more or less irregular. In a few cases, there was observed on the prothallia an antheridium, which consisted simply of a row of four or five cells, as shown in the annexed figure.



The conditions under which they were grown may have affected their development. The spores were sown rather thickly under a small glass in an ordinary room. These gave rise principally to the male prothallia, though a few developed into the female form. A number of them was transferred, when a few weeks old, to a hot-bed, and these produced a much larger proportion of the female prothallia.

The spores were gathered the last of March, having therefore remained on the plants through the winter. They began to germinate in five days from the time they were sown.

It was found that the spores of *Onoclea sensibilis* germinated with equal promptness.

On examining a number of prothallia of *Aspidium spinulosum*, gathered on the 17th inst., one was found with a well-marked fibro-vascular bundle, although the vessels were not perfect.

Detroit, Mich.

DOUGLASS H. CAMPBELL.

Cleistogene flowers.—*Nemophila maculata*, Benth. At Clark's Ranch, on the Merced River in California, I found this species wholly cleistogene in June last, in the cultivated spots near the stream. As in all cleistogamous plants, every flower was fertile, and the weight of a small plant covered with seed vessels was remarkable. Out of what must have been many hundreds of plants which came under my eye, I saw but one flower with a perfect corolla.

Impatiens pallida, Nutt.—Along the coast of Alaska, in lat. 56°, in the early part of July I found *Impatiens pallida* with all the flowers which had so far appeared, evidently cleistogene. I could find none with petals. Two weeks later, farther north, in lat. 59°, I found the same plant in apparently the same stage of flowering, with all the flowers having, or having had, corollas. I could see nothing which would suggest any satisfactory reason for the different behaviors.

Opuntia leptocaulis, D. C.—In my garden I have a large bush of the long-spined form of this species. Though several years old it has never borne a flower. Over a year ago a number of small buds appeared, but not one opened, or, indeed, advanced beyond a com-

paratively microscopic stage. But fruit resulted which has taken a full year to mature, and which the past month was of a pretty rosy red. Not a seed was found in any one. This is evidently not a case of cleistogamy, for it is probable that there were no perfect stamens in the buds, or else there would have been seeds. Still, the circumstance is interesting.

Viola sarmentosa, Dougl.—It seems scarcely necessary to put upon record that a violet is cleistogene, for any of them may be expected to be; but perhaps it is as well to note the actual fact. In the woods around Departure Bay, in British Columbia, *Viola sarmentosa* was very abundant, and, at the time of my visit in July last, all the flowers were cleistogamous.

THOMAS MEEHAN.

A Few Additions to the Berzelius Catalogue.—Upon seeing a list of plants reported by Prof. Eaton as new to the "Berzelius Catalogue" of plants growing within thirty miles of Yale College, I was reminded that I might give a similar list of those that I have found in this section of the circle.

Reseda Luteola, L., is given in the Catalogue as lost. I have since observed it in its old habitat, and also in another locality.

I am credited with finding *Viola pedata*, L., var. *bicolor*, Gray, but this is a mistake, it was var. *alba*. I have never seen the var. *bicolor* growing wild.

Erodium cicutarium, L' Her., grows at Stony Brook.

Polygala fastigiata, Nutt., grows at Atlanticville, beyond the limits of the Catalogue.

Amorpha fruticosa, L. Of this, reported as lost, I have found several specimens again.

Ammania humilis, Mx., is common on Long Island.

Hydrocotyle umbellata, L., is common on Long Island.

Galium boreale, L., I observed on the shore of the Housatonic, below Cornwall Bridge, Ct., in 1875, but probably not within the limits of the Catalogue.

Eupatorium hyssopifolium, L., is very common on Long Island.

Aster nemoralis, Ait., I have found in a sandy swamp near River Head.

Xanthium spinosum, L., formerly grew at Mt. Sinai, but I have not seen it for some years.

Achillea Millefolium, L., var. *roseum*, is common on Long Island.

Matricaria inodora, L., was formerly plentiful, but I have not seen it for several years.

Cirsium horridulum, Mx., is common on Long Island.

Vaccinium Oxycoccus, L., grows at one locality in Wading River.

Mentha aquatica, L., var. *crispa*, is found at Mt. Sinai.

Echium vulgare, L., is found at Port Jefferson.

Asclepias incarnata, L., (typical form) grows at Wading River.

Rumex maritimus, L., was found in abundance at Montauk Point in 1879. This is far beyond the limits of the Catalogue, but is interesting because it is new to the State of New York.

Amarantus viridis, L., is plentiful at East Hampton, though beyond the limits of the Catalogue.